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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/776,343	02/02/2001	Fank Ansorge	10537/86	9082

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EXAMINER

SONG, HOON K

ART UNIT

PAPER NUMBER

2882

DATE MAILED: 06/26/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/776,343

Applicant(s)

ANSORGE ET AL.

Examiner

Hoon Song

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 6/2/03.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8, 23-25 and 32-43 is/are pending in the application.
4a) Of the above claim(s) 9-22 and 26-31 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8, 23-25 and 32-43 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 February 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4. 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-3, 6, 8, 23, 32-34, 37,39, 40 and 43, are rejected under 35 U.S.C. 102(b) as being anticipated by Quinn (US 5510273).

Regarding claim 1, Quinn teaches a focal surface for an opto-electronic imaging system, comprising:

at least one detector formed of at least one solid state element (12a-z) and configured to record an image, the at least one detector being flexible, at least one of the focal surface and the at least one detector having a curvature for recording a curved image plane (abstract, figure 2);

a detector carrier (20) configured to hold the at least one detector; and
a flexible carrier substrate (10) , the at least one solid state element being thinned and connected to the flexible carrier substrate (column 3 line 53+).

Regarding claim 2, Quinn teaches that the at least one detector includes a thinned silicon wafer, the at least one detector being arranged on the focal surface in a curved manner (column 3 line 42+).

Regarding claim 3, Quinn teaches that the at least one detector is formed using an auxiliary carrier (20) connected to the at least one solid state element for thinning the

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at least one solid state element, the auxiliary carrier being at least one of removable (work table) and removed after the at least one solid state element is thinned.

Regarding claim 6, Quinn teaches that the at least one detector includes at least one of a CMOS line detector, a CCD line detector, a solid state line detector and a two-dimensional array detector (column 3 line 43+).

Regarding claim 8, Quinn teaches that a temperature control system configured to maintain the at least one detector within a predefined temperature range, the detector carrier at least one of including at least one channel and being coupled to at least one pettier element (column 2 line 34+).

Regarding claim 23, Quinn teaches a detector for image recording, comprising:
a thinned solid state element (12a-z); and
a flexible carrier substrate (10), the solid state element being connected to the flexible carrier substrate;

wherein the detector is flexible (abstract).

Regarding claim 32, Quinn teaches an opto-electronic imaging system,
comprising a focal surface, the focal surface including:

at least one detector formed of at least one solid state element and configured to record an image, the at least one detector being flexible, at least one of the focal surface and the at least one detector having a curvature for recording a curved image plane (figure 2, abstract);

a detector carrier (20) configured to hold the at least one detector; and

a flexible carrier substrate (10), the at least one solid state element being thinned and connected to the flexible carrier substrate (column 3 line 53+).

Regarding claim 33, Quinn teaches that the at least one detector includes a thinned silicon wafer, the at least one detector being arranged on the focal surface in a curved manner (column 3 line 42+).

Regarding claim 34, Quinn teaches that the at least one detector is formed using an auxiliary carrier (20) connected to the at least one solid state element for thinning the at least one solid state element, the auxiliary carrier (20) being at least one of removable and removed (work table) after the at least one solid state element is thinned.

Regarding claim 37, Quinn teaches that the at least one detector includes at least one of a CMOS line detector, a CCD line detector, a solid state line detector and a two-dimensional array detector (column 3 line 43+).

Regarding claim 39, Quinn teaches that a temperature control system configured to maintain the at least one detector within a predefined temperature range, the detector carrier at least one of including at least one channel and being coupled to at least one peltier element (column 2 line 34+).

Regarding claim 40, Quinn teaches an opto-electronic imaging system, comprising a detector, the detector including:

a thinned solid state element (12a-z); and

a flexible carrier substrate (10), the solid state element being connected to the flexible carrier substrate;

wherein the detector is flexible (figure 2, abstract).

Regarding claim 43, Quinn teaches an opto-electronic imaging system, comprising:

at least one of a focal surface and a detector (figure 2);

the focal surface including: at least one detector formed of at least one solid state element (12a-z) and configured to record an image, the at least one detector being flexible, at least one of the focal surface and the at least one detector having a curvature for recording a curved image plane (figure 2);

a detector carrier (20) configured to hold the at least one detector; and

a flexible carrier substrate (10), the at least one solid state element being thinned and connected to the flexible carrier substrate;

the detector including:

a thinned solid state element (12a-z); and

a flexible carrier substrate (10), the solid state element being connected to the flexible carrier substrate;

wherein the detector is flexible (abstract).

Claims 1, 23, 32, 40 and 43 are rejected under 35 U.S.C. 102(b) as being anticipated by Kamiko (US 5991467).

Regarding claims 1, 23, 32, 40 and 43, Kamiko teaches a focal surface for an opto-electronic imaging system, comprising:

at least one detector formed of at least one solid state element and configured to record an image, the at least one detector being flexible, at least one of the focal

surface and the at least one detector having a curvature for recording a curved image plane (figure 23);

a detector carrier (26) configured to hold the at least one detector; and
a flexible carrier substrate (86) , the at least one solid state element being thinned and connected to the flexible carrier substrate (figure 23).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 4-5, 7, 24-25, 35-36, 38 and 41-42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Quinn.

Regarding claims 4-5 24-25, 35-36 41-42 Quinn does not teach that the solid state elements has claimed thickness, width and height. However, the claimed

dimension itself is well known in the semi-conductor art, thus one would be motivated to design certain dimension of optical detector using identical process of making optical detector of Quinn's.

Regarding claims 7 and 38, Quinn fails to teach that an actuator configured to vary the curvature. However, Quinn teaches a relationship of radius of curvature and chip dimensions (column 5 line 25+) thus, one would be motivated to adopt any variation to the work table (20) in order to produce an optical detector having different focal point.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hoon Song whose telephone number is 703-308-2736. The examiner can normally be reached on 8:30 AM - 5 PM, Monday - Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Kim can be reached on 703-305-3492. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-7722 for regular communications and 703-308-7724 for After Final communications.


Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

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Hoon Song
June 15, 2003


EDWARD J. GLICK
Supervisory Patent EXAMINER
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